بإستخدام الإستنتاج الرياضي اثبت أن:

1. $1^3+2^3+3^3+.....+n^3=\left(\frac{1}{2}n(n+1)\right)^2$

2. $1(1!)+2(2!)+3(3!)+.....+n(n!)=(n+1)!-1$

3. $1^2-2^2+3^3-4^2+.....-(2n)^2=-n(2n+1)$

4. $1^2-2^2+3^3-4^2+.....+(2n+1)^2=(n+1)(2n+1)$

5. $\sum_{r=1}^{n}\frac{1}{(3r-2)(3r+1)}=\frac{n}{3n+1}$

6. $\frac{8}{3*5}-\frac{12}{5*7}+\frac{16}{7*9}-\cdots \text{to } n \text{ terms} == \frac{1}{3}+(-1)^{n-1}\frac{1}{2n+3}$

7. $\frac{1^2}{1*3}+\frac{2^2}{3*5}+\frac{3^2}{5*7}+\cdots \text{to } n \text{ terms}=\frac{n(n+1)}{2(2n+1)}.$

8. $\begin{bmatrix}-2 & 9\\ -1 & 4\end{bmatrix}^n=\begin{bmatrix}1-3n & 9n\\ -n & 1+3n\end{bmatrix}$

9. $\begin{bmatrix}\cos x & -\sin x\\ \sin x & \cos x\end{bmatrix}^n=\begin{bmatrix}\cos nx & -\sin nx\\ \sin nx & \cos nx\end{bmatrix}$

10. $\frac{1}{\sqrt{1}}+\frac{1}{\sqrt{2}}+...+\frac{1}{\sqrt{n}}>\sqrt{n}$ لقيم $n\geq 2$

11. $n!>n^3$ لقيم $n>5$